



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

FISHING IN VENEZUELA

By Professor A. S. PEARSE

UNIVERSITY OF WISCONSIN

FOR those reared in the temperate parts of the earth, the tropics appear as fairy lands which have a never-ending charm. To be sure, there are some stay-at-homes who worry about the heat, dread the noxious animals, and long for city-made sanitation, but to the real traveler the tropics can never be anything but delightful. It was with pleasure, therefore, that the writer boarded the good ship *Caracas* last June, bound for La Guaira.

The object of the journey was to investigate the fishes of a tropical lake, and the "Laguna de Valencia" in the northern part of Venezuela had been chosen as being the most suitable one in America. Lake Valencia is thirty miles long and, as the Venezuelans love to say, "possesses twenty-two islands, receives the waters from twenty-two rivers, and is twenty-two leagues in circumference." It is said to be fifty meters deep in some places and contains an abundance of fishes.

In the United States, the newspapers have led us to believe that Venezuela is rather pro-German, and the writer was pleasantly surprised to find that ninety-nine per cent. of the people are very much interested in the success of the allies. The officials were always very courteous and obliging. Whatever shortcomings the Spanish peoples may have, no race can excel them in courtesy. The president's son, Coronel Ali Gomez, loaned a boat, furnished a man, and did everything in his power to make the expedition a success. The Coronel is a great fisherman and went on a number of expeditions himself (Figs. 1, 2). Dr. H. Pittier, an American, Mr. Charles Lazzari and Dr. Juan Iturbe also rendered invaluable assistance. The greatest obligation, however, was to my constant companion, Agapito—expert fisherman, crack shot, philosopher and true friend. In a strange and thinly populated country one appreciates a reliable and thoughtful companion more than anything else.

The lake proved to be very interesting. It was large enough to give some variety of habitats and was inhabited by a number of strange fishes. The islands had rocky beaches, but the shores elsewhere were muddy and grown up with a dense thicket of

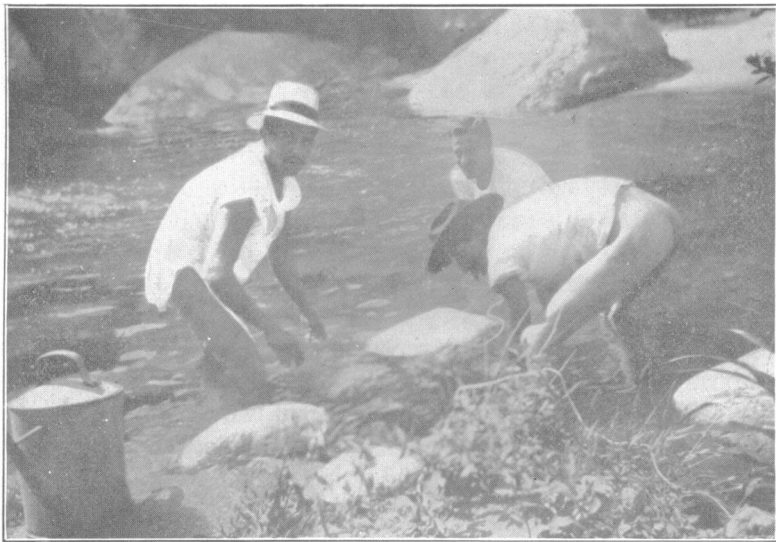


FIG. 1. CATCHING CORONCHOS IN THE RIO CASTANO.

rushes which stood eight to ten feet above the water (Fig. 3). The rushes were the home of the beautiful *galletas*, a sort of a rail which subsists on aquatic vegetation. There were also solemn *chiquaquos* (herons) and several smaller birds. A saber-beaked gull and a little tern hunted along the shore.

In the rushes lived the *bavas*, and we had great sport shooting them from the boat (Figs. 4, 5). Gliding along the margin

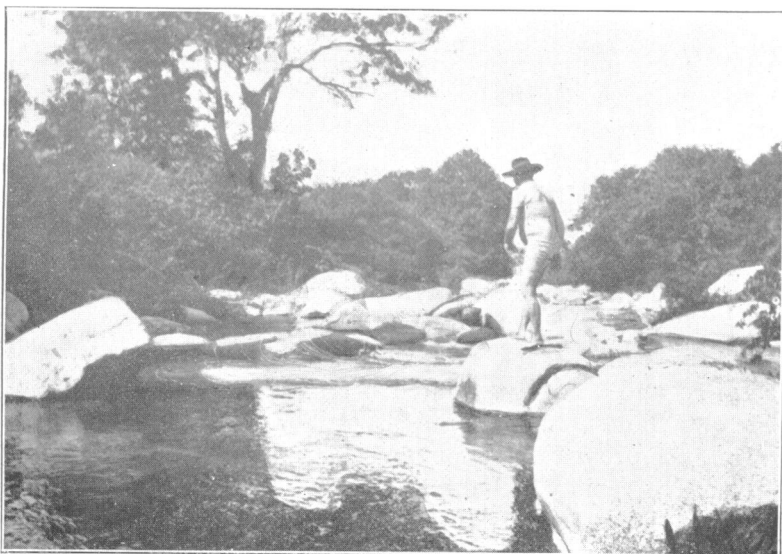


FIG. 2. COLONEL GOMEZ USING A CAST NET AMONG THE ROCKS OF THE RIO CASTANO.

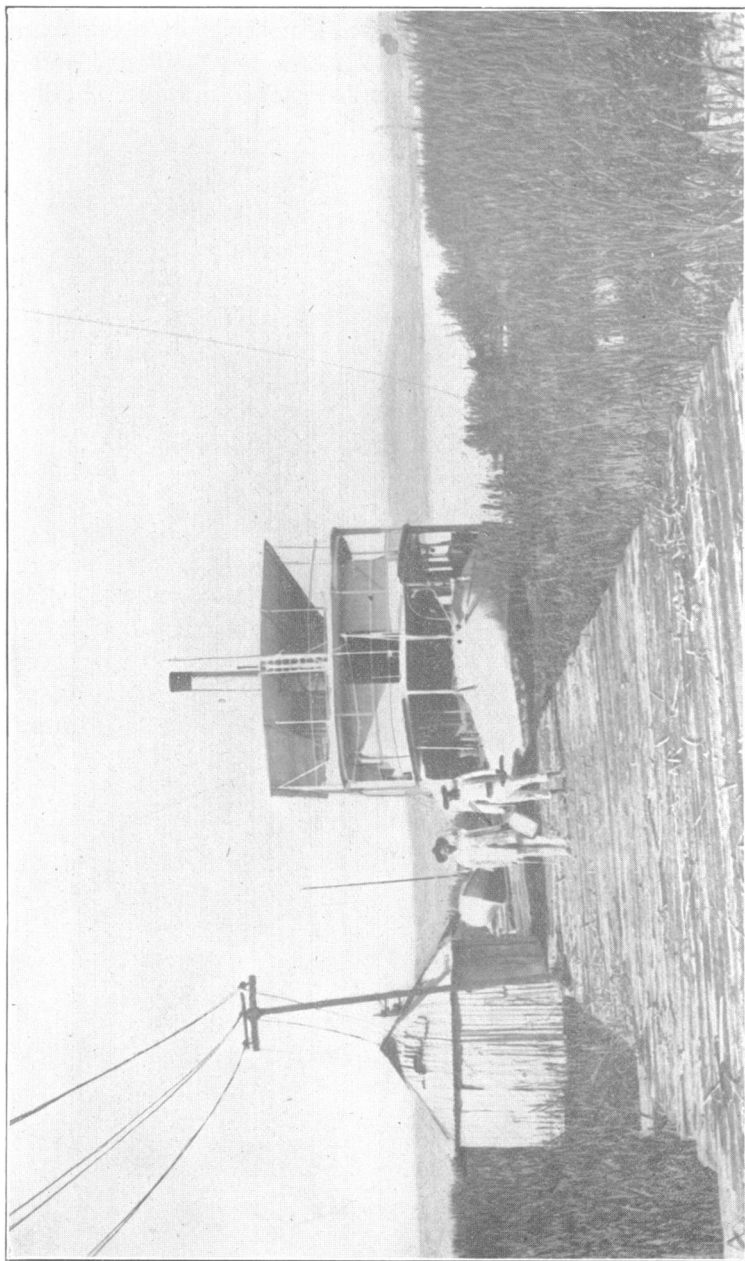


FIG. 3. A BOAT BROUGHT FROM FRANCE IN SEPARATE PARTS, CARRIED A HUNDRED MILES OVER MOUNTAINS INTO VENEZUELA, LAKE VALENCIA.

of the rushes, we strained our eyes for sleeping individuals on the rushes or watched for the four slow-moving objects above the water which marked the eyes and nostrils of a sneaking *bava* that had sighted us first. "*Alli esta una*"—Pedro and I held our breath. Then Agapito's rifle cracked and our paddles

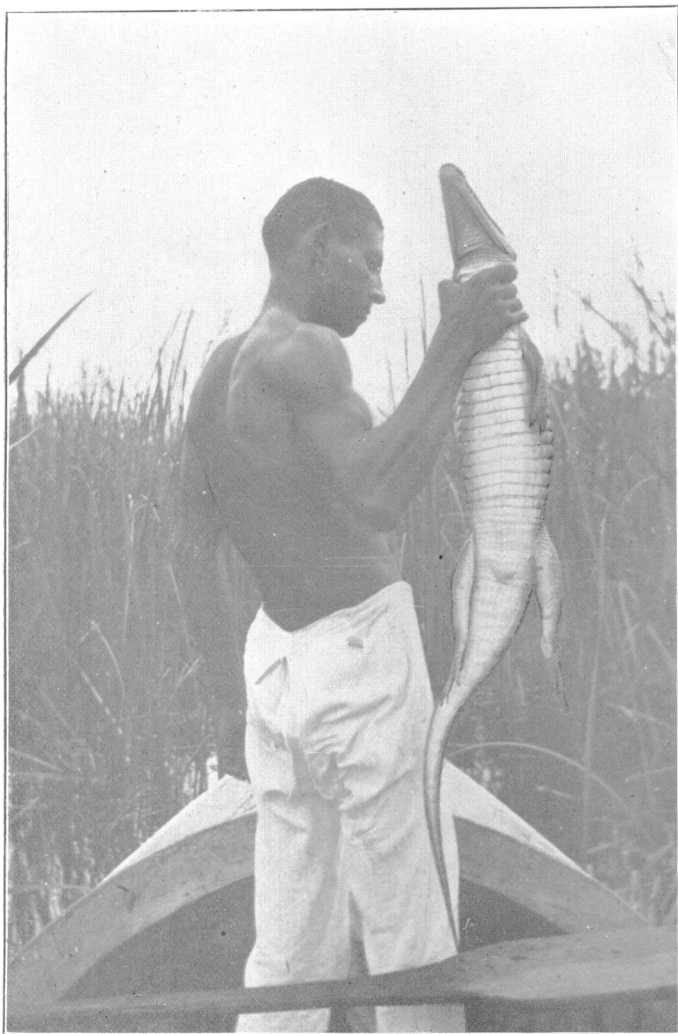


FIG. 4. PEDRO AND A BAVA.

lashed the water in order that we might get the specimen before its death struggles lost it in the rushes. If it sank before we arrived, faithful Pedro (Fig. 4) stripped and dived down into the mud after it.



FIG. 5. AGAPITO AND THREE BAVAS.

None of the *bavas* in this lake were more than seven or eight feet long, but in some of the Venezuelan rivers there are caimans that reach fifteen. I had always supposed that the alligator tribe lived largely on fishes and was surprised to find that



FIG. 6. CORMORANTS ON AN OLD BOAT SHELTER.

the *bavas* ate all sorts of aquatic animals. One had consumed a number of snails and a frog; the stomach of another contained nothing but ten "*cuchirachis*"—flat water bugs about an inch long.

Cormorants were abundant. They sat on objects alongshore (Fig. 6) and took to the water at our approach. These birds subsist on the abundant sardinas, their great diving ability enabling them to capture these with ease. The cormorants were of considerable scientific interest, as they contained the adult stages of some of the parasites which were found as larvæ in fishes. One individual examined had fifty-seven trematode

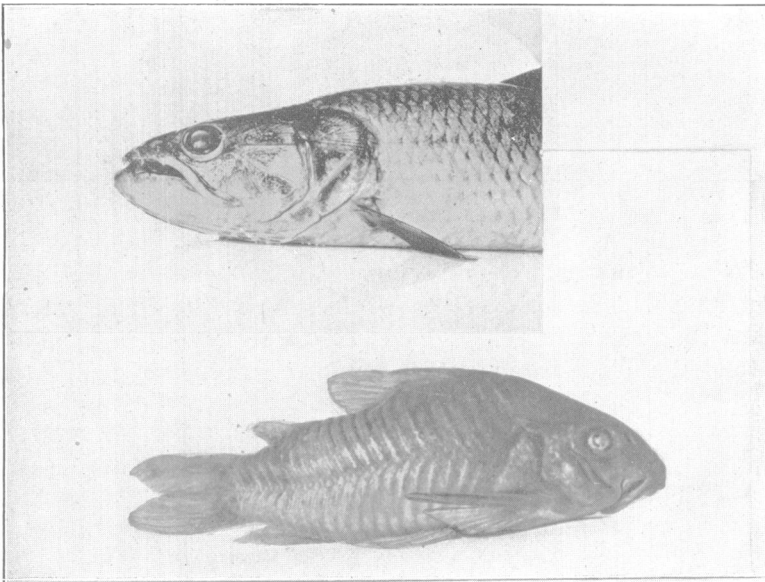


FIG. 7. A GUABINA.

FIG. 8. A PLATED NEMATOGNATH, A BEAUTIFUL LITTLE SCALED CATFISH.

worms clinging to the inside of its esophagus and about fifty nematodes in its stomach.

Sixteen or more species of fishes were found in the lake and its tributaries. In shallow water everywhere were myriads of little sardinas. These were of several species—some fed on snails, others ate algæ or microscopic, floating plants and animals. Among the larger fishes the dominant one was the "*guabina*" (Fig. 7), a fish-eater somewhat like a pickerel, but more fierce and aggressive. Its razor teeth often cut the nets to shreds, and woe to the unwary finger that came near them!

There were several kinds of strange catfishes at the mouths

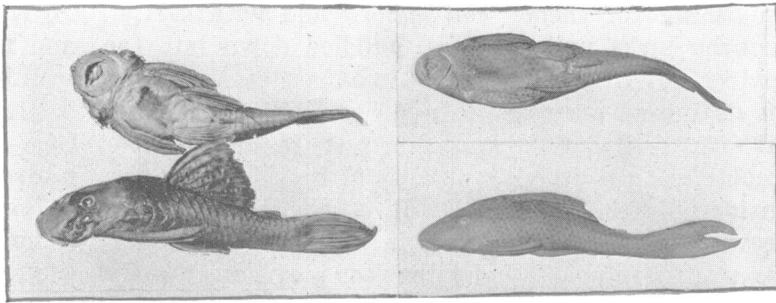


FIG. 9. TWO SPECIES OF SUCKER-LIKE FISHES: A, BARBON; B, PANAUQUE.

of the rivers. The common species was much like those in the United States, but had "whiskers" nearly as long as the body. Sometimes in the creeks we caught the beautiful little plated nematognaths. These rare creatures are unique among catfishes in possessing two rows of scales on each side of the body (Fig. 8).

There were three kinds of eels. One was a gymnotid—a close relative of the famous electric eel which occurs in the Guianas. Another little species we caught on two occasions in the mud dredge at a depth of fifteen meters below the surface of the lake, where it was buried in the soft bottom mud.

Once in deep water we caught a "*panaque*" (Fig. 9, B), a strange armored creature reminding one of Devonian times. This fish is a sort of a sucker which is often found in rivers. In northern Venezuela the sucker-group has attained considerable diversity and is widely distributed. In the rivers there are several types—one species with soft barbs on the front of the head, another with a long protuberant snout, etc.

One of these sucker-like fishes, the "*coroncho*" (Fig. 10), is abundant in the Rio Castano near Maracay. We had great

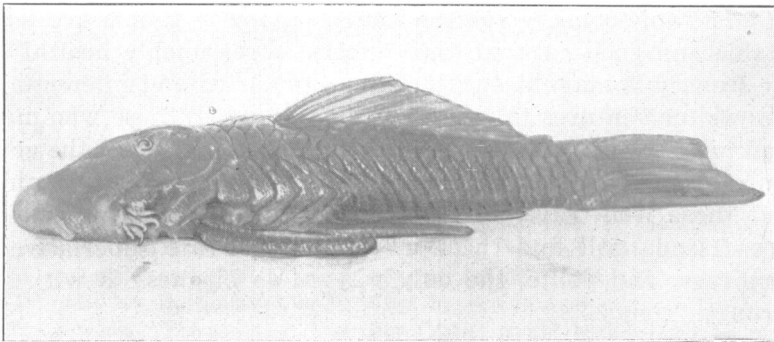


FIG. 10. A CORONCHO.

fun fishing for them "*con mano*" and with cast nets. The coroncho lurks under stones, huddled down into the sand in crevices, and firmly attached by means of its sucker-like mouth. The fisherman must lie on his belly in the water and reach at arm's length under the rocks to secure the fish. The cast net is circular and has weights all around the edge. Its use requires considerable skill (Fig. 2). It is grasped in the center and thrown so as to spread. After it has covered an area of bottom, long sticks are poked under the stones within it, and the fishes are caught as they rush from their hiding places.

Some limnological work was done in Lake Valencia. Temperatures were taken and the gaseous content of the water was determined to a depth of twenty-six meters. On July 17 the temperature of the water was as follows:

Depth in meters	0.5	1	2	3	4	5
Temperature	27.6	27.5	27.5	27.5	27.2	27.2
Depth in meters	7.5	10	12.5	15	20	25
Temperature	27.16	27.15	27.15	27.15	27.01	26.25

A slight stratification is shown, and this was also evident from the gas determinations. There was less oxygen and more carbon dioxide in the deeper water.

Catches were made at various depths with a mud dredge. The little clams (*Sphæridæ*) and dipterous larvæ, so characteristic of the bottom of the lakes in temperate regions, were absent and in their places were thousands of minute snails. A little towing was done which indicated that the plankton was less varied than that in the lakes of cooler regions.

Fishes were more abundant and varied in shallow water and few were caught below twelve meters. All the species occurring in deep water were mud-, snail- or fish-eaters.

In closing the writer wishes to point out that Venezuela is an admirable country for the naturalist. The people are hospitable and good-natured, the country is reasonably healthful, the scenery is magnificent, the fauna is varied and interesting. The writer ventures to give two admonitions to those who may plan to do scientific work there: (1) Get the backing of the government officials and you can do anything. (2) Keep in mind that those who travel in strange countries expecting to make new friends will find them. Where people are superlatively hospitable and polite, the only way to do business is with or through friends.